

performance of the device being provided power by the battery, set through the user interface.

19. The battery system of claim **16**, wherein the calculated power is determined based on ratings of the thermal cycle unit or standard heat transfer relationships obtained for the battery, based on constants, state variables of the battery, and/or empirical relationships for the battery.

20. The battery system of claim **16**, the thermal management controller is further configured to control the selective adjustment of the heat transfer coefficient by respectively controlling selective adjustments of heat transfer coefficients of each of plural battery modules based on respectively predicted total heat generations by each battery modules, when the battery comprises the plural battery modules stacked together in the battery.

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